TINYON IP 2000 WI

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Invented for life

HD 720 | PIR | WPS

- Compact and stylish 720p indoor wireless LAN camera
- IEEE 802.11b/g/n wireless connectivity
- WPS for easy wireless network setup
- Built-in PIR motion detector and white light illuminator
- FTP, Dropbox and e-mail alarms

The 720p indoor microbox cameras with WiFi and a passive infrared (PIR) motion detector are ready-to-use, complete network video surveillance systems inside a compact and stylish housing. These cameras bring Bosch's high-performance technology into the realm of homes, small office and retail businesses by offering a cost-effective solution for a broad range of applications.

System overview

Ideal for indoor use, the compact, aesthetic design is suitable for installations where housing size and appearance are important. The camera is available in two colors and is supplied with a versatile mounting bracket, allowing it to be easily positioned for best coverage.
The wireless connectivity, with no external antenna, further enhances the aesthetic nature of the installation and also removes the need for a network cable.

Functions

Integrated wireless connection
The integrated wireless LAN feature supports the IEEE 802.11b, g and n standards allowing the camera to connect to fast WiFi access points. The WPS button provides an easy and simple way to set up the wireless LAN connection and security settings.

Motion and audio detection
The built-in passive infrared (PIR) sensor detects motion within 5 meters, even in complete darkness. It can then trigger an alarm, start recording or switch on the integrated white light LED to provide illumination in darkened rooms. These functions can also be activated by the detection of sound by the built-in microphone.

Built-in microphone and loudspeaker
The built-in microphone and loudspeaker allows remote users to listen in on an area and communicate messages to visitors or intruders via the loudspeaker. Audio detection can be used to generate an alarm if needed.

intelligent Dynamic Noise Reduction
Quiet scenes with little or no movement require a lower bitrate. By intelligently distinguishing between noise and relevant information, intelligent Dynamic Noise Reduction (iDNR) reduces bitrate by up to 50%. Because noise is reduced at the source during image capture, the lower bitrate does not compromise on video quality.
With iDNR, our focus is to significantly reduce storage costs, and lessen network strain by only using bandwidth when needed.

Area-based encoding
Area-based encoding is another feature which reduces bandwidth. Compression parameters for up to eight user-definable regions can be set. This allows uninteresting regions to be highly compressed, leaving more bandwidth for important parts of the scene.

Bitrate optimized profile
The average typical optimized bandwidth in kbits/s for various image rates is shown in the table:

fps	720p	480p
30	1200	600
15	955	478
12	877	438
5	568	284
2	245	122

Multiple streams
The innovative multi-streaming feature delivers various H.264 streams together with an M-JPEG stream. These streams facilitate bandwidth-efficient viewing and recording as well as integration with third-party video management systems.
Depending on the resolution and frame rate selected for the first stream, the second stream provides a copy of the first stream or a lower resolution stream.
The third stream uses the I-frames of the first stream for recording; the fourth stream shows a JPEG image at a maximum of 10 Mbit/s.

Easy installation
The power supply adapter delivered with the camera provides the +5 VDC power supply required. The wireless connectivity removes the need for a network cable, however, an Ethernet compliant network cable can be connected if required. The WPS button simplifies the selection of a WiFi network and the network password setting.

Tamper and motion detection
A wide range of configuration options is available for alarms signaling camera tampering. A built-in algorithm for detecting movement in the video can also be used for alarm signaling.

Cloud-based services
The camera supports time-based or alarm-based JPEG posting to four different accounts. These accounts can address FTP servers or cloud-based storage facilities (for example, Dropbox). Video clips or JPEG images can also be exported to these accounts.
Alarms can be set up to trigger an e-mail or SMS notification so you are always aware of abnormal events.

Access Security
Password protection with three levels and 802.1x authentication is supported. To secure Web browser access, use HTTPS with a SSL certificate stored in the camera.

Complete viewing software
There are many ways to access the camera's features: using a web browser, with the Bosch Video Management System, with the free-of-charge Bosch Video Client, with the video security mobile app, or via third-party software.

Video security App
The Bosch video security mobile App has been developed to enable **Anywhere** access to HD surveillance images allowing you to view live images from any location. The App is designed to give you complete control of all your cameras, from panning and tilting to zoom and focus functions. It's like taking your control room with you.
This App, together with the separately available Bosch transcoder, will allow you to fully utilize our dynamic transcoding features so you can play back images even over low-bandwidth connections.

System integration
The camera conforms to the ONVIF (Open Network Video Interface Forum) Profile S specification. This guarantees interoperability between network video products regardless of manufacturer.
Third-party integrators can easily access the internal feature set of the camera for integration into large projects. Visit the Bosch Integration Partner Program (IPP) website (ipp.boschsecurity.com) for more information.

Certifications and approvals

Standards	
	EN 60950-1; UL 60950-1; CAN/CSA-C22.2 NO. 60950-1-07
	FCC Part15 Subpart B, Class B
	FCC Part15 Subpart C
	EMC directive 2004/108/EC
	EMC directive 1999/5/EC
	EN 300 328
	EN 301 489-1-17

	EN 62311
	EN 50130-4
	EN 50130-5
	EN 55022 class B
	EN 55024
	EN 61000-3-2
	EN 61000-3-3
	SRRC China
ONVIF conformance	EN 50132-5-2; IEC 62676-2-3
Product certifications	CE, FCC, UL, cUL, CB

Technical specifications

Power	
Power Supply	+5 VDC via supplied power adapter
Power Consumption	4.4 W typical
Power adapter	100-240 VAC to +5 VDC power supply included

Sensor	
Type	1/4-inch CMOS
Total sensor pixels	1280 x 720

Video performance – Sensitivity (3200K, 89% reflectivity, 30IRE, F2.8)	
Sensitivity	1.0 lx 0.0 lx (with LED)

Video performance - Dynamic range	
Dynamic range	76 dB

Video streaming	
Video compression	H.264 (MP); M- JPEG
Streaming	Multiple configurable streams in H.264 and M-JPEG, configurable frame rate and bandwidth.
Overall IP Delay	Min. 120 ms, Max. 340 ms
GOP structure	IP, IBP, IBBP
Encoding interval	1 to 30 ips

Video resolution (H x V)	
720p HD	1280 x 720 (at 30 ips)
Upright 9:16 (cropped)	400 x 720
D1 4:3 (downscaled/ cropped)	704 x 480

Video resolution (H x V)	
480p SD	Encoding: 704 x 480; Displayed: 854 x 480
432p SD	768 x 432
288p SD	512 x 288
240p SD	Encoding: 352 x 240; Displayed: 432 x 240
144p SD	256 x 144

Video functions	
Adjustable picture settings	Contrast, Saturation, Brightness
White Balance	Standard automatic mode, manual mode and hold
Shutter	Automatic Electronic Shutter (1/30 to 1/150000) Fixed shutter (1/30 to 1/15000) selectable
Backlight compensation	On/off
Noise reduction	Intelligent Dynamic Noise Reduction (iDNR)
Privacy Masking	Four independent areas, fully programmable
Video Analysis	Motion+
Other functions	Image mirror, Image flip, Pixel counter, Video watermarking, Display stamping, Motion detection, Tamper alarm, Audio alarm

Audio streaming	
Standard	G.711, 8 kHz sampling rate L16, 16 kHz sampling rate AAC-LC, 48 kHz sampling rate AAC-LC, 80 kHz sampling rate
Signal-to-Noise Ratio	>50 dB
Audio Streaming	Full-duplex / half duplex

Input/output	
Audio input	Built-in microphone
Audio output	Built-in loudspeaker
Alarm input	1 input
Alarm activation voltage	0 to 3.3 VDC active low, or short
Alarm output	1 output
Alarm output voltage	+5 VDC Load current 1 A max.

Detection	
Detector	PIR (passive infrared)
Distance	5 m (16 ft)
Detection angle	90° (H)

Night vision	
Distance	4 m (13 ft)
Illumination	White light LED
Optical	
Lens type	Fixed 2.5 mm, F2.8
Lens mount	Board mounted
Horizontal field of view	89°
Vertical field of view	50°
Software	
Unit Configuration	Via web browser or Configuration Manager
Firmware update	Remotely programmable
Software viewer	Web browser, Bosch Video Client, or third party software
Wireless LAN	
Wireless standard	IEEE 802.11b/g/n
Wireless security	WPA-PSK (TKIP), WPA2-PSK (AES)
WiFi protected setup	WPS button, PIN
Network	
Protocols	IPv4, IPv6, UDP, TCP, HTTP, HTTPS, RTP/RTCP, IGMP V2/V3, ICMP, ICMPv6, RTSP, FTP, Telnet, ARP, DHCP, NTP (SNTP), SNMP (V1, MIB-II), 802.1x, DNS, DNSv6, DDNS (DynDNS.org, selfHOST.de, no-ip.com), SMTP, iSCSI, UPnP (SSDP), DiffServ (QoS), LLDP, SOAP, Dropbox, CHAP, digest authentication
Encryption	TLS 1.0, SSL, DES, 3DES, AES (optional)
Ethernet	10/100 Base-T, auto-sensing, half/full duplex
Connectivity	ONVIF Profile S, Auto-MDIX
Mechanical	
Dimensions (H x W x D)	109 x 65 x 47 mm (4.29 x 2.56 x 1.85 in)
Weight	105 g (3.70 oz)
Environmental	
Operating Temperature	-10 °C to +40 °C (14 °F to +104 °F)
Storage Temperature	-20 °C to +70 °C (-4 °F to +158 °F)
Humidity	0% to 95% relative humidity (non condensing)

Ordering information

TINYON IP 2000 WI
Cost-effective, ready-to-use, wireless LAN microbox camera with PIR for indoor surveillance. 720p30; 2.5 mm lens; +5 VDC PSU; motion/audio detection; cloud services; free viewing Apps; iDNR; PIR; wireless LAN; black
Order number **NPC-20012-F2WL**

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Cost-effective, ready-to-use, wireless LAN microbox camera with PIR for indoor surveillance. 720p30; 2.5 mm lens; +5 VDC PSU; motion/audio detection; cloud services; free viewing Apps; iDNR; PIR; wireless LAN; white
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